MEDIA RELEASE

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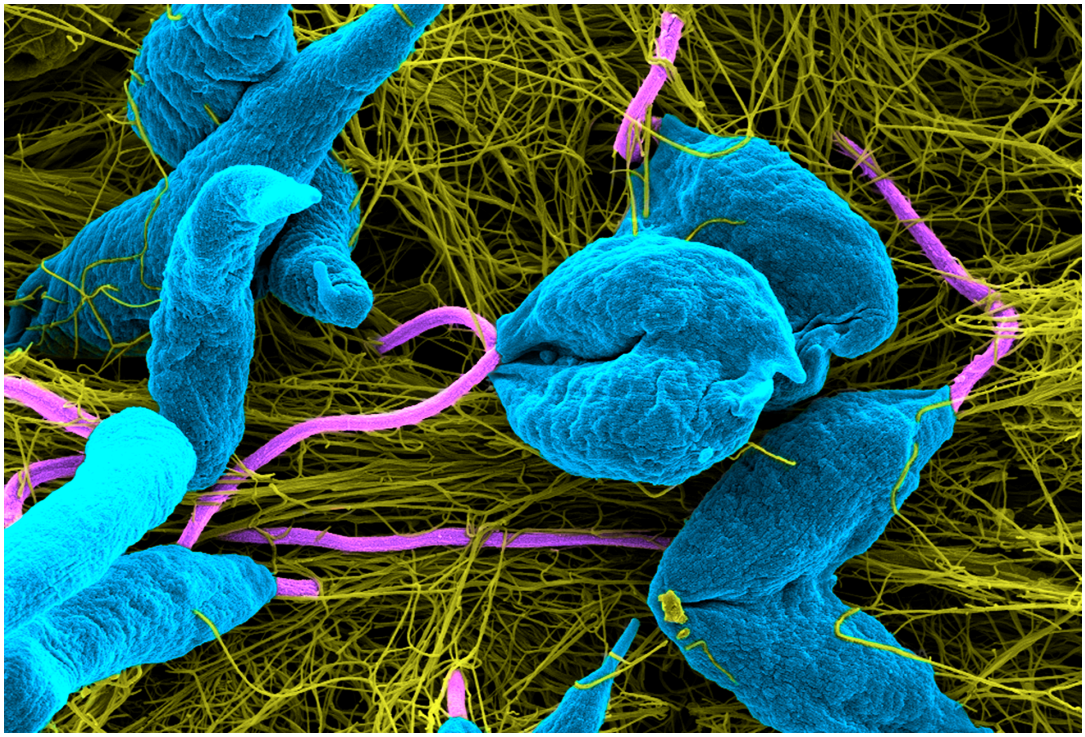
When science meets art!

Dr Rohit Jain is highly commended in the NHMRC Science to Art Award.



Centenary Institute scientists dedicate their lives to understanding disease and finding cures and occasionally, in this vital role, the images they see through the microscope are worth capturing, giving the public a rare glimpse of disease through their eyes. This amazing image, captured by Centenary Institute's Dr Rohit Jain, has been highly commended in the NHMRC Science to Art Award 2017, which recognises outstanding examples of the art that has arisen from research funded by the NHMRC. Dr Jain believes, "It is important to showcase cutting-edge medical research to the public and the NHMRC Science to Art award initiative represents a wonderful opportunity to do so."

Dr Jain, with the Centenary Institute's Immune Imaging Program, headed by Professor Wolfgang Weninger, investigates how the immune system fights infections in the skin. Our researchers have access to world-class imaging technologies, such as multiphoton microscopy (Centenary Institute) and scanning electron microscopes (Australian Centre for Microscopy & Microanalysis, The University of Sydney) to dissect the workings of the immune system. While multiphoton microscopes provide

researchers with the capability to capture the dynamic nature of immune responses in real time, the use of scanning electron microscopy provides unprecedented detail of cells and pathogens. Our scientists are therefore in the unique position of being able to see microbes and immune cells in action and capturing this moment is truly an art.

Dr Jain was investigating the immune response towards the *Leishmania major* parasite, when he was intrigued. “Looking under the microscope, we were perplexed by the immobile nature of the parasites. They just hunkered down to face the immune cell onslaught. Rarely does one get a chance to see the great Greek epic unfold within living tissues in the ensuing battle for survival between the host and the parasites” said Dr Jain. He decided to utilise scanning electron microscopy to obtain a closer look at the interactions between the parasite and the collagen fibres within the skin, as can be seen in the attached microscopic image.

Imaging is now a core technology in medical research. The pictures are not only scientifically important; they can also be aesthetically powerful. This prize winning entry called “Trojan War” represents the first step in the war between the host and the pathogen.

The image highlights the adhesion of *Leishmania* parasites (blue cells with pink flagellum) to the collagen fibres of the skin (golden). Unlike most pathogens that attempt to evade the initial immune response, these particular parasites adhere to the extracellular matrix and become immobilized. After being engulfed by neutrophils, the parasites use these cells as a ‘trojan horse’ to evade the ensuing adaptive immune response.

The NHMRC Science to Art Award helps to raise awareness about current medical research, further educating the public about the great work of our researchers by giving them a rare chance of seeing disease, like scientists do.

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https://www.centenary.org.au/wp-content/uploads/2017/07/L.-major-parasites-and-neutrophils.mov